

Newsletter from IIT Patna

Impulse

2019 - 2020/ Vol. XII

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FROM THE DIRECTOR'S DESK



Dear IIT Patna Fraternity,

"IMPULSE- as the name suggests- is an impetus. For IIT Patna the impetus is to excel - excel in all fronts, academics, sports, culture and everything. IMPULSE is the documentation of IITP's energy and depth in all walks of life. The magazine chronicles the year round activity of the institute, capturing sports and cultural events, NSS activities, workshops and conferences. This multifaceted description of the Institute's functioning is a very engaging read. Over the last few years IMPULSE has reached a level of reporting that is both informative and attractive.

I congratulate the IMPULSE team for the great work they have done to bring out the 2020 issue. Lots of effort and planning has gone behind this journalistic endeavour and I am sure the readers will get a good view of IIT Patna's all round activity.

विश्व का मुकुटमणि आई आई टी पटना
सदा तत्पर सदा जाग्रत पीछे ना जाने हटना।

Jai Hind!

Prof. Pushpak Bhattacharyya

Editor's Note

Welcome to IIT Patna's newsletter IMPULSE for the year 2019-20. I am delighted to bring you this year's newsletter. Congratulations to all those who have received awards and recognitions since the last edition of the newsletter. This newsletter is not only a showcase of the achievements in the institute as a whole but is also a reflection of the constructive ideas and innovative thoughts of faculty members, staff and students.

On behalf of the editorial team, I thank our honourable Director, Prof. Pushpak Bhattacharyya, faculty members, staffs and students for their willing support in bringing out this newsletter.

I sincerely hope this edition makes for an interesting read!

Dr. Meghna Dutta



Convocation 2019



The 7th Convocation of IIT Patna was held on 6th August 2019 at IIT Patna campus in Bihta. Shri Harivansh, Deputy Chairman of the Rajya Sabha, was the Chief Guest for the convocation. The Guest of Honour on this occasion was Prof. Devang Khakhar, former Director of IIT Bombay and a well-known Chemical Engineer. In this convocation, 191 B.Tech. students, 26 M.Sc. students, 78 M.Tech. students and 40 students from Ph.D. were awarded their degrees.

While Ashish Raj, B. Tech. from the Department of Computer Science and Engineering, got the President of India Gold Medal for being the best student in academics, the Director's Gold Medal was awarded to Tarun Garg from the Department of Computer Science and Engineering. The Institute Silver Medals for securing highest CPI in each B.Tech. programme went to Ashish Raj, Shivam Tiwari, Abhishek Singh, Nipoon Gupta, and Divyanshu Khandelwal. The Kedar Nath Das Memorial Award was given to Ashish Raj from the Department of Computer Science and Engineering. The Aryabhata Gold Medal in M.Sc. was awarded to Mansi from the Department of Mathematics. The Institute Silver Medals in M.Sc. were awarded to Sonali Jana, Mansi and Alok Mahanta from the departments of Physics, Mathematics, and Chemistry respectively. The Chairman's Gold Medal for being the best student in academics in M.Tech. programme was awarded to Zufishan Haque from Communication System Engineering and the Institute Silver Medals for securing highest CPI in each of



the M.Tech. programmes were awarded to Kumar Anjneyal, Zufishan Haque, Aakash, Suyash, Vishnu R. Nair, Anurag Kumar, Shubham Pathak, Raju Kumar Sharma and Abhilash Srivastava. Apart from these medals, "Proficiency in Project Work Prize" were awarded to the students of B.Tech. and M.Tech. for the best project works in their departments.

As the Chief Guest, Shri Harivansh, whose speech was read out in absentia, exhorted the students to be enthusiastic about the future and make an effort to face challenges thrown to them by the outside world. He laid stress on encouraging the culture of innovation and industry – academia collaborative research. The Chairperson in-charge of the Board of Governors as well as the honourable Director of the institute, Prof. Pushpak Bhattacharyya dwelt at length over the growth of the institute during the last year. He congratulated the students on their success. In his lecture he focussed on entrepreneurial activities having a lot of support from the Government of Bihar. Faculty members were highly praised for getting accolades at various academic forums, and the students were also praised for showing their mettle in various competitions at the national level. He reminded that as per the NIRF rankings, IIT Patna has been placed at the 22nd position among Engineering Institutions in the country and it has also secured the 141st rank in QS BRICS University Rankings 2019. In 2019, IIT Patna has succeeded to place 80% of its B.Tech. (2015-19) and 50% of the M.Tech (2017-19) students with 210 offers, which is about 10% higher than the previous year, he added.



Academic Events

1. New Website Launch

IIT Patna had decided to launch its new official website in the presence of the honourable Director, Prof. Pushpak Bhattacharyya, on 4th February 2020. The focus was mainly given on providing a more user friendly arrangement and attractive design which would not only be easy to use but would be secure as well. Blue is considered as a theme colour in website as it is associated with depth and stability. It symbolizes trust, loyalty, wisdom, confidence, faith and truth. With the launch of this new website everyone is now looking forward to have more colourful feathers in the cap of IIT Patna's achievements.

2. CEP Courses

The Continuing Education Programme (CEP) activity has been set up to meet the manpower training and knowledge upgradation needs of the industry, academia, and research organizations. The CEP office has organized many courses with emerging tools and techniques during the year 2019-20.



a. Failure Analysis of Engineering Products (10th-11th May 2019)

The prime objective of this course was to introduce various analytical tools for characterizing such failures in engineering products. The analysis primarily involved structural, micro-structural and thermal techniques to reach a meaningful solution.

b. Mediation, Moderation and Conditional Process Analysis (17th-18th May 2019)

This course introduced the latest advances in testing the direct, indirect and conditional indirect effects using bootstrapping procedures with the help of SPSS Process macro as proposed by Hayes (2013). This help the researchers to understand when and how to conduct mediation, moderation and moderated mediation.

c. Effective Communication and Presentation Skills (21st-24th May 2019)

The purpose of this course was to empower students (under graduates) and fresh entrants in the professional world by helping them to develop their speaking and presentation skills.

d. Principles and Practices in Social Research (22nd-25th July 2019)

This course was meant to engage social science researchers and practitioners in the required principles and practices for rigorous critical research to avoid academic receipt of any kind.

e. Interplay of Machine Learning and IoT (30th Aug-1st Sept 2019)

This course familiarizes the participants to the basic concept and need of IoT, introduce and present the signal processing and machine learning techniques for IoT, describe various applications of IoT and demonstrate the applications with real smart experimental set-ups.

f. Time Series Econometrics with STATA (07th-8th Dec 2019)

The purpose of the course was to equip participants with technical knowledge so that they can use time series data scientifically and can use its findings to corroborate or correct existing theories of varied field of economics and other social science subjects.

g. Recent Trends in Friction Stir Processing Technique (RTFSP2019) (18th-20th Dec 2019)

The course was about the processing of advanced materials, development of smart materials/structures and

solid state processing based hybrid additive (3D printing) manufacturing.

h. Computer Forensic (16th-20th Dec 2019)

This course aimed to introduce various computer forensics related topics through a "learning by doing" approach. Computer forensics involved the examination of information contained in digital media with the aim of recovering and analysing latent evidences. The ubiquitous nature of digital devices and their integration into our day-to-day activities make them one of the richest sources of information in today's criminal and civil investigations.

i. Health Informatics (9th-10th Jan 2020)

This course introduced various health informatics tools which are being used by public health practitioners and researchers. Emphasis was given to understand such technological interventions in different social contexts.

j. Deep Learning for Natural Language Processing (10th-23rd Jan 2020)

This course covered various fundamental concepts of NLP, recent research directions and hands-on on various machine learning and deep learning approaches to NLP. The following topics in NLP was discussed in details: N-gram models, Word sense disambiguation, Parsing, Part-of-speech tagging, Sentiment Analysis, Machine Translation, Question Answering, Natural Language Understanding, Natural Language Generation etc.



3. SERB School on Nonlinear Dynamics

IIT Patna organized a prestigious "SERB School on Nonlinear Dynamics" during December 03-31, 2019 at IIT Patna. This is a Premier Scientific Event in the broad and contemporary areas of Nonlinear Dynamics. The Director of the SERB-School was Dr. Utpal Roy, Dept. of Physics, IIT Patna. The event was the first of its kind in this region of the country. The speakers also have been the greatest teachers and researchers across the country. The inauguration ceremony was graced by Chief Guest Prof. M. Lakshmanan from Bharathidasan University and Prof. Sudhir R. Jain from BARC, Mumbai. The dais was shared by the Prof. Karali Patra, then Director-I/C, IIT Patna, Prof. V. R. Dantham, Head of the Dept. Physics, Prof. Ajay D Thakur, Dept of Physics and Prof. Utpal Roy, Dept. of Physics, Director of the SERB School. There were lectures on the basic areas of Nonlinear Dynamics. Advanced courses included Dynamics of Nonlinear & Quantum Optics, Climate Science & Sustainability, and Nonlinear Matter Wave

& Quantum Technology. Some Special Public Lectures were also arranged by renowned scientists & engineers. There were sessions for hands on experiments and participants were encouraged to give short oral presentations. Participants also had an excursion to Nalanda.

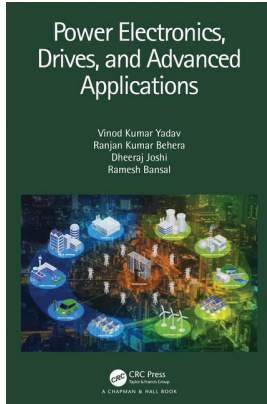


4. DAE- C. V. Raman Lecture

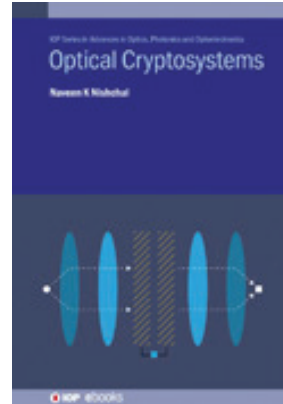
Department of Physics, IIT Patna has arranged the prestigious DAE-C. V. Raman Lecture of the year 2019-20, Dr. Utpal Roy being the organizing chair of the lecture. This lecture series was initiated in the year 1989 by Indian Physics Association, with a grant from the Department of Atomic Energy (DAE), India. The speaker of this series was a distinguished researcher, Prof. Amita Das from IIT Delhi. Title of the lecture was "Turbulence in Plasma and some experimental challenges in Physics and Engineering". The lecture was dedicated to Prof. P. K. Kaw, a legend in Plasma research and founder director, Institute of Plasma Research, Gandhinagar, India.



5. Books Published



Dr. Ranjan Behera of the Department of Electrical Engineering has published a book titled "Power Electronics, Drives, and Advanced Applications" along with his three other co-researchers.



Dr. Naveen K. Nischal of the Department of Physics published an e-book titled "Optical Cryptosystems" which introduces the subject of optical cryptography and provides up-to-date coverage of optical security schemes.

Consultancy with other Institutions

2019-20			
Sl. No.	Project Name	PI's Name and other Details	Co-PI
1	Study of Tilt and Shift of well Bangra Ghat	Dr. Vaibhav Singhal Dr. Ramkrishna Bag	NIL
2	Impact Assessment of Smart Gram(4G/LTE-A) deployment in villages	Dr. Pritam Kumar	NIL
3	ICCC- Bihar Sharif Smart City Mission- DPR	Dr. Jimsion Mathew	Dr. SomnathTripathy Dr. Rajiv Misra Dr. Arijit Mondal Dr. Samrat Mondal Dr. Joydeep Chandra Dr. Aggarwal Dr. A Maity
4	Vetting of design and drawing of 12 numbers	Dr. Trishikhi Raychoudhury Dr. Vishal Deshpande Dr. Ramkrishna Bag	NIL
5	Inspection of 06 Units (Super Sucker Machine) to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. M K Khan
6	Inspection of 06 Units (Truck mounted suction cum jetting machine) to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. M K Khan
7	Inspection of 03 units (sweeping machine 5 cu. M) to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. M K Khan
8	Inspection of 405 Units of Wheelbarrow (110 litres) to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. M K Khan
9	Evaluation of Arsenic and Iron Removal technology and process	Dr. Trishikhi Raychoudhury	Dr. Jose Parambil Dr. Ashwini Kumar Sharma
10	Energy Audit at Ruban Hospital, Patna	Dr. S Sivasubramani	Mr. Anil Verma Mr. Biswajit Som
11	Liquefaction Analysis for NIT Patna Bihta Campus	Dr. PradiptaChakraborty Dr. Amarnath Hedge Dr. Ramakrishna Bag	
12	Soil Investigation for NIT Patna Bihta Campus	Dr. Pradipta Chakraborty Dr. Amarnath Hedge Dr. Ramakrishna Bag	

2019-20			
Sl. No.	Project Name	PI's Name and other Details	Co-PI
13	Inspection of 75 units (Tata ACE ZIP Cab & Load body BS-IV) to be delivered to Patna Municipal Corporation	Mohd. Kaleem Khan	Dr. Manabendra Pathak Dr. Anirban Mahato
14	Inspection of 06 Units (Dewatering pump, Kirloskar & APM300-34) to be delivered to Patna Municipal Corporation	Dr. Manebendrapathak	Dr. M K Khan Dr. Anirban Bhattacharya Dr. Anirban Mahato
15	Inspection of 75 Units pf Fogging Machine RPF-10-Spe_2 to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. Kaleem Khan
16	Inspection of 75 units of Fogging Machine (Suraksha model) to be delivered to Patna Municipal Corporation	Dr. Manabendra Pathak	Dr. Kaleem Khan Dr. Anirban Bhattacharya Dr. Anirban Mahato
17	Vetting of structural design of Pre-stressed Precast Concrete Bleachers	Dr. Vaibhav Singhal	NIL
18	Inspection of 1 Unit of Volvo truck Tree Transplanter (Volvo FMX 460) to be delivered to Patna Municipal Corporation	Dr. M Pathak	Dr. Kaleem Khan Dr. Anirban Bhattacharya Dr. Anirban Mahato
19	Third party quality assurance inspection under Patna Smart City Limited - DCSE Projects	Dr. Jimson Mathew	Dr. Rajiv Misra Dr. Sriparna Saha Dr. Joydeep Chandra Dr. Asif Ekbal Dr. Somnath Tripathy Dr. Arijit Mondal Dr. Mayank Agarwal Mr. Sandip Kishore
20	Third party quality assurance inspection under Patna Smart City Limited - DCEE Projects	Dr. Sudhir Verma Dr. Ramakrishna Bag	Dr. Pradipta Chakraborty Dr. Koushik Roy Dr. Amarnath Hedge Dr. Vishal Deshpande
21	Technical Appraisal of DPRs for Setting up CETPs at Barari, Bhagalpur, Fatuha, Patna, Hajipur, Vaishali, Bela and Muzaffarpur	Dr. Subrata Hait	NIL
22	Technical vetting of the DPR on integrated Control and Command Centre: Muzaffarpur Smart City	Dr. Jimson Mathew	Dr. Somnath Tripathy Dr. Arijit Mondal Dr. Samrat Mondal Dr. Joydeep Chandra Dr. Aggarwal Dr. A Maity Mr. Sandip Kishore
23	Technical Vetting of the DPR on Integrated Control and Command Centre : Patna Smart City Project	Dr. Jimson Mathew	Dr. Somnath Tripathy Dr. Arijit Mondal Dr. Joydeep Chandra Mr. Sandip Kishore
24	To synthesize the Fe-based robust super hydrophobic coating by one-step and scalable technique	Dr. Anup Kumar Keshri	NIL
25	Review ICC - Project at Bhagalpur	Dr. Jimson Mathew	Dr. Somnath Tripathy Dr. Rajiv Misra Dr. Arijit Mondal Dr. Samrat Mondal Dr. Joydeep Chandra Dr. Mayank Agarwal Mr. Sandip Kishore
26	Technical Vetting of DPR for Integrated Solid waste management (ISWM) for Bhagalpur Smart City	Dr. Subrata Hait	NIL
27	Technical Vetting of DPR of Smart Road Network of Bhagalpur Smart City Limited	Dr. Sudhir Varma	NIL
28	Fatigue S-N curves for welds at 10Hz frequency	Dr. Akhilendra Singh	Dr. Surajit Kumar Paul
29	Determine hole expansion ratio (HER) from notch tensile test	Dr. Surajit Kumar Paul	NIL
30	Performance of destructive/non-destructive tests on a well cap in connection with Hajipur-Sagauli New BG Rail line project	Dr. Koushik Roy	Dr. Vaibhav Singhal

Various Projects in IIT Patna

2019-20				
Sl. No.	Project Name	Scheme Name	PI's Name and other Details	Co-PI
1	Planning of process industries production to minimize carbon emission and energy consumption	ECR	Dr. Nitin Dutt Chaturvedi	NIL
2	Fist-2018 under DST	FIST	HoD - Dept of ME	All faculty members Department of ME
3	Fist-2018 under DST	FIST	HoD - Dept of Physics	All faculty members Department of Physics
4	Mechanical and micro-structural characterization of additive friction stirred (AFS) 3D structures made of Al 6061 t6 aluminium powder	NIL	Dr. Probir Saha	NIL
5	Development and implementation of AI Driven Adaptive Microgrid Control and Protaton Schemes	SPARC	Dr. Sanjoy Kumar Parida	Dr. Jimson Mathew
6	Deep Learned Detecation and Classification of Multiple Instrusions Using WDM Intensity and Phase-Sensitive OTDR in Underwater Environment	NIL	Dr. Arijit Mondal	Dr. Sumanta Gupta Dr. Jimson Mathew
7	Geospatial location estimation and navigation in autonomous sensor networks/smart city	NIL	Dr. Sudhir Kumar	Prof. A K Singh MNNIT Allahabad
8	Improving regional transportation services using GPS data	SPARC	Dr. Joydeep Chandra	Dr. Sourav Kumar Dandapat Dr. Niloy Ganguly Dr. Maria Galvao Dias
9	Multi-node Wide Area Distributed control to Improve the Power System Stability in Indian Context	NIL	Dr. S K Parida	NIL
10	Development of Lizard-like Robotic Spy Surveillance System	IMPRINT-II	Dr. Raju Halder	Dr. Atul Thakur - IIT Patna Dr. G Banda - IIT Indore Dr. Anshuman - IIT Dhanbad Dr. Rajarshi - IACS
11	mHealth Technologies for Gender empowerment in Bihar	NIL	Dr. Papia Raj	NA
12	Development of cryogenic micromachining for fabrication of soft and structure polymer based artificial skin with multi-modal sensing capability	NIL	Dr. Karali Patra	NIL
13	Fire Retardant Materials : Investigation on Mechanistic & Thermo-physical props & synthesis process	NIL	Dr. Anirban Chowdhury	NIL
14	Functional polymers and materials from chitosan using click inspired reactions	NIL	Dr. Subrata Chattopadhyay	NIL
15	Distributed EV charge scheduling and consensus based control for EV charging network	DAAD	Dr. Rajiv Misra Prof. Ing Axel, Germany	NIL
16	Designing Disaster Preparedness Training Modules using Indigenous Knowledge and Increasing Community Awareness through Contextualized Techniques in Bihar	IMPRESS	Dr. Sweta Sinha	Dr. Smriti Singh Dr. Vaibhav Singhal

2019-20

Sl. No.	Project Name	Scheme Name	PI's Name and other Details	Co-PI
17	The diffusion of environmental sustainability innovation in hospitals of Bihar state of India	IMPRESS	Dr. Richa Chaudhary	NIL
18	Seismic strengthening of unreinforced masonry building using ferrocement bands	NIL	Dr. Vaibhav Singhal	Dr. Hemant (IIT Guwahati)
19	Effect of cyclic creep in rolling contact fatigue of railways.	NIL	Dr. Surajit Kumar Paul	NIL
20	Development of low friction rolling element bearings for enhanced reliability and efficiency	Imprint -2	Dr. Mayank Tiwari	Dr. Surajit K Paul
21	Development of Bi/Tri-metallic plasmonic nanoparticles decorated metal Oxide semiconductor as Photoc	NIL	Dr. Sushant Kumar	Dr. R Ganeshan (IGCAR)
22	Conduct of AICTE-ATAL programme Augment Reality(AR)/Virtual Reality(VR) Dec 2-6, 2019	ATAL Academy Programme	Dr. Rajiv Misra	NIL
23	Study of novel carbonaceous nanofillers like carbon dots on polyurethane elastomers	NIL	Dr. Dinesh Kotnees	Dr. Prolay Das
24	Effect of burnup on ballooning and burst behaviour of Zircaloy-4 cladding tubes under stimulated LOCA	NIL	Dr. Mohd Kaleem Khan	Dr. Manabendra Pathak
25	Bio-electrochemical analysis and systemic enhancements in microbial fuel cells for bioelectricity generation	NIL	Dr. Vikash Kumar (DBT-Research Associate)	Dr. Subrata Hait (Mentor)
26	Introduction to Blockchain Technology: Cryptocurrency and Beyond	ATAL	Dr. Raju Halder	Dr. Jimson Mathew
27	Multi-Modal Input Text Summerrization (MMITS)	NIL	Prof. Pushpak Bhattacharya Dr. Sriparna Saha Dr. Asif Ekbal	NIL
28	Performance Assessment of Roads Constructed using waste plastics	NIL	Dr. Sudhir Varma	Dr. Subrata Hait
29	Efficient Multicarrier waveform design for next generation non-orthogonal multiple access for wireless mobile communication by IIT Patna	NIL	Dr. Preetam Kumar	Dr. Sudhan Majhi
30	Surface Active Additives for Enhanced Flow Boiling	NIL	Dr. Rishi Raj	NIL
31	Flash sintering of oxide ceramic: Effect of electrical parameters on densification mechanism, microstructure and mechanical properties		Dr. Devinder Yadav	
32	Glycodiverdification: Design and Synthesis of Biologically Important Conformationally Constrained Non Classical Bicyclic Sugars Via Activation of C(sp ³)-H Bonds	NIL	Dr. Amit Kumar	NIL

MoUs with other Institutions

Sl. No.	Name of Originator/ Principal Investigator	Dept.	Type of Document- MoU/Research Agreement/NDA	Purpose of Agreement/MoU	Name of Party
1	Dr. Anup Kumar Keshri	MME	Agreement	To define the confidentiality conditions under which TML and IITP will exchange information for the purpose of the Project i.e. to explore and engage in exchange of confidential information in relation to project	Tata Motors Ltd.
2	Dr. S K Parida	EE	MoU and NDA	For knowledge sharing and capacity building in the concern areas	Eastern Regional Load Despatch Centre (ERLDC) POSOCO
3	Dr. Anup Kumar Keshri	MME	Research Agreement	Development and optimization of cost effective and scalable near net shape plasma sprayed membrane with graded porosity for microfiltration application	Carborundum Universal Limited, Electrominerals Division, Kalamassery, Chennai
4	Dr. Rishi Raj	ME	Agreement	Development of an agricultural waste based off-the-grid climate control unit for storage and agricultural produces	New Leaf Dynamic Technologies Pvt. Ltd.
5	Dr. Subrata Hait	CEE	MOU	Technical Expertise	District Water and Sanitation Committee Bhojpur, Bihar
6	Dr. Sriparna Saha	CSE	NDA	IoT based wireless wearable medical devices to monitor critical patients locally and remotely with the use of artificial intelligence	AtlaMedico TechSolutions Pvt. Ltd., Sonbhadra, UP
7	Dr. Surajit Kumar Paul	ME	Agreement	Determine hole expansion ratio (HER) from notch tensile test	Tata Steel Limited
8	Dr. Subrata Hait	CEE	MOU	IIT Patna as the Technical Partner under the National Clean Air Programme (NCAP) for the State of Bihar	Ministry of Environment, Forest and Climate Change
9	Dr. Dinesh Kotnees	MME	NDA	Study of novel carbonaceous nanofillers like carbon dots on polyurethane elastomers	Manali Petrochemicals Limited
10	Dr. Asif Ekbal	CSE	Agreement	Sevak- an Intelligent Indian Language Chatbot	Wipro Limited
11	Dr. Sriparna Saha	CSE	NDA	LG-Soft Restaurent Recommendatuin Project	LG-Soft India Pvt. Ltd.
12	Dr. Jawar Singh	EE	NDA	The NXP has agreed to take 2-3 M.Tech 2nd year students for 11 months followed by employment The NXP has also agreed to share their data and libraries for research purpose	NXP Semiconductors

Sl. No.	Name of Originator/ Principal Investigator	Dept.	Type of Document- MoU/Research Agreement/NDA	Purpose of Agreement/MoU	Name of Party
13	Dr. Neha Kiritkumar Shah	Physics	Agreement	The Department of Energy has approved user agreement for its designated user facilities at all national laboratories. These master agreements cover liability, indemnification, intellectual property and financial issues and they are a prerequisite for experimental work at BNL	Brookhaven Science Associates LLC
14	Dr. Karali Patra	ME	NDA	Development of cryogenic micromachining for fabrication of soft and structure polymer based artificial skin with multi-modal sensing capability	Mind Tree



Alumni Achievements

- Venkatesh Chaturvedi (BT/EE/11) received the award of 'Unacademy Top Educator' for 2017, 2018 and 2019.
- Sudipta Acharya (PhD/CS/13) received "Outstanding Post-Doctoral Inbound Award 2019" from Shenzhen University, China for excellent research publications in the field of computational Biology and pattern recognition.
- Pranjali Sharma (BT/CST/14) received the prestigious Prime Minister Research Fellowship (PMRF) for her project on manufacturing of hydrogen cylinder.
- Dr. Prashant Kumar (PhD/EE/09) was elected as a senior member in IEEE, New Jersey.
- Alok Kumar Verma (PhD/EE/10) received the "Young Scientist Award" in 2019 by the Institute of Technical and Scientific Research.

Proud Moments of IIT Patna

1. IIT Patna was ranked at 22 in NIRF 2019 ranking.
2. IIT Patna was ranked in 801-1000 slab in the Times Higher Education World University Rankings 2020 out of more than 1400 Universities from all over the world.
3. IIT Patna was ranked in 301-350 slab in the QS Asia University Rankings 2020 out of 550 universities in Asia.
4. Dr. Subrata Hait is inducted as a member of the editorial board of the SN Applied Sciences, a Springer Nature journal for three years beginning February 2020 and an academic Editor of PLOS ONE, a journal published by the Public Library of Science (PLOS), USA.
5. Dr. Navin Nischal is appointed as an Associate Editor of an international journal Optical Engineering published by SPIE, USA
6. Dr. Sudhan Majhi is appointed as Membership Development Committee Vice-Chairs of IEEE, Communication Society Asia Pacific Board.
7. Dr. Sriparna Saha featured amongst 10 remarkable AI influencers and researchers in India.
8. M.Tech. students: Shubham Saxena and Ritesh Kumar under the supervision of Dr. Sudhir Kumar are the joint winners of MVC All India Student Paper Contest in PG Category, held at conference INDICON 2019.
9. Mr. Saptarshi Mandal, working under the supervision of Dr. Proloy Das has been selected for the Newton Bhabha Ph.D. Placement Programme for the year 2019-20.
10. Prof. Pushpak Bhattacharyya has been selected as the prestigious Abdul Kalam National Fellow. The citation reads, 'Your selection is in recognition of your outstanding contributions in the field of Natural Language Processing, Machine Learning, Artificial Intelligence as well as your contribution in the growth of engineering profession in the country.'
11. Kumar Nishant Ranjan Sinha, Durgesh Ranjan, Md. Qaisar Raza, Nirbhay Kumar and Rishi Raj received the Prof. P. K. Sarma Best Paper Award during the 25th National and 3rd International ISHMT-ASTFE Heat and Mass Transfer Conference (IHMTTC).
12. Prof. Pushpak Bhattacharyya has been appointed as the Associate Editor (Natural Language Processing) of the prestigious journal Neurocomputing (Elsevier Publishers).
13. Shubham Saxena, Ankur Pandey, Ritesh Kumar and Pritam Khan working under the supervision of Dr. Sudhir Kumar, were the joint winners in the 16th IEEE India Council International Conference (INDICON), IEEE, Rajkot, India.



14. Understanding Social Positioning of Animals in Bangla through the Conceptualization of Metaphors by Monalisa Bhattacharjee and Sweta Sinha were awarded the Best Paper Award at the "Bridging Research on Cognition and Speech" (BROCAS 19) Conference.
15. Kriti Gupta, working with Dr. Smirit Singh and Dr. Jyotsna Agrawal received Indian Psychological Association's President Gold Medal Award for the young psychologist at UGC-sponsored two-day International Conference on 'Psychology of Crime'.
16. Ms. Kavita, pursuing Ph.D. under the supervision of Dr. Subrata Hait has been conferred with the Best Paper Award for 'Improved sequential approach for hybrid

bioleaching of metals from e-waste' in the Springer-affiliated International Conference on Sustainable Environmental Engineering and Science (SEES-2019).

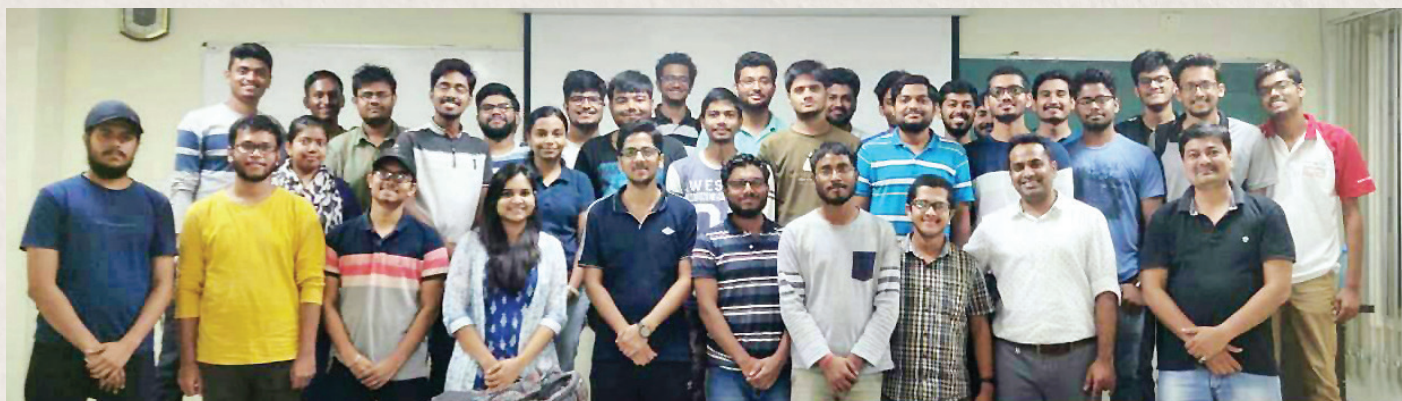
17. Dr. Rishi Raj has been recognized with the INSA Medal for Young Scientists (2019) award "For developing innovative techniques for significantly enhancing phase-change heat transfer in zero gravity environments."
18. Kundan Kumar working under Dr. Anirban Chowdhury has been awarded with MRSI prize for the best poster titled, "Remarkable Ionic conductivity in a Textured La₂Ce₂O₇ Ceramic made by Conventional Sintering" at the First Indian Materials Conclave.

Training and Placement

As IIT Patna completes a decade and steps into the 12th year, placement has seen a steep rise. With every passing year, the expectation of the recruiters is growing, and we are happily working towards fulfilling them at a high pace. So far, in this academic year, the current undergraduate batch of 2019-20 has bagged a total of about 140 offers from 70+ companies for full-

time employment. Concurrently 3rd year B.Tech. and 1st year M.Tech. students have obtained about 50 internship offers in many of these companies.

Two of our students have bagged International offers by TOPLINE Co. Ltd. and MAX Connect company of Japan through Web Staff. Within India, Microsoft and Code Nation have offered



Placement preparation workshop for final year students by Thinkers & Fillers

the highest package of 40 lakhs and 31 lakhs respectively. While retaining our bond with previous recruiters, we have also added new names to our list of recruiters including TOPPER and HSBC among many others, which have offered a package of 26 lakhs and 15 lakhs to five and six of our students respectively. Apart from these, students have received offers from Goldman Sachs, Google, Samsung, Mediatek and many others with profiles such as Software Engineer, Research Engineer, Scientist, Lecturers, and Analyst, to name a few. With about two more months to the end of the academic year, we are working towards setting up new records in career placement for our students.

In addition to the placement process, TPC has also conducted a one-day workshop on 10th August 2019 by external experts to address common placement topics such as resume

preparation, interview preparation, and soft skills such as public speaking skills and time management. Another session on career opportunities in management for B.Tech. graduates was also hosted by the TPC on 19th November 2019 with faculty members from the Xavier Institute of Social Service, Ranchi. A major highlight during this placement season was the formation of a student placement committee with members from all batches and streams. Under the guidance of the TPC team and the student leadership of Mr. Piyush Singh, Mr. Nitin Kashyap, Mr. Vishal Kalyan Waghmare, and Mr. Rajeev Raushan, several students were involved in inviting and hosting the companies for the placement process. Collectively, they have worked to keep up the spirit of IIT Patna and have set a bright path for their upcoming juniors to follow.

Institute Colloquiums

Nobel Prize Lectures

In celebration of the prestigious Nobel Prize distribution ceremony, IIT Patna organizes a series of lectures every year. Professors take the stage to discuss facts and nuances that trigger the world to consider a particular research work or service for such an honour as the Nobel Prize. This year too the series began with a lecture on the Nobel Prize in Chemistry for 2019 and the Nobel Prize in Literature for 2018 by Dr. A. K. Thakur and Dr. Smriti Singh respectively. While Dr. Praloy Das delivered a lecture on the Nobel Prize in Medicine for 2019. Dr. Rajendra N. Paramanik delivered his lecture on the Nobel Prize in Economics for 2019. Dr. Arghya Choudhary and Dr. Priyanka Tripathi talked on the Nobel Prize in Physics for 2019 and Nobel Prize in Literature in 2019 respectively. The series ended with a lecture on the Nobel Prize on Peace in 2019 by Dr. Ajay D. Thakur.

Distinguished Lecture

Prof. Rajeev Sangal from IIT, Hyderabad delivered a motivational speech on 'High Goals in Life'. He took cue from the popular Hindi movie 'Dangal' and elaborated multiple clips from it to explore and explain the journey an IIT aspirant and his/her life during IIT days. He encouraged students to set larger goals in life to thrive for success beyond material world and make society a better place for all. Faculty members were also guided for effective mentoring to nurture true potential in students. His personal experiences to encourage pupil to inculcate values and ethics have been well accepted in the students' circle.



Events – Cultural and Technical

Induction Programme

Like every year, for the new batch of UG and PG students the induction program was successfully organized and sessions of Music, Dance and Dramatics were arranged for the new students.



Foundation Day

IIT Patna celebrated the day it was established in 2008. This edition of foundation day was celebrated in the newly constructed Gymkhana of the Institute, followed by various cultural activities and competitions. The program began with the lamp lighting by our Honourable Director, which was followed by the institute song. The Director described his journey of IIT Patna along with its achievements in the past years. The day concluded with the speeches of our two Chief Guest - Professor D.V. Khakhar, Director IIT Bombay and Dr. Mangesh Joshi and vote of thanks by our anchors.



Nebula '19

This edition of the freshers' party proved to be the most successful Nebula in the history of IITP welcoming more than 350 freshers this year. The party began with a lamp lighting ceremony shortly followed by a formal introductory speech by the Chief Guest. Beginning with a plethora of events, first performance to be showcased was a musical performance by B.Tech. and then an instrumental by both UG and PG freshmen. After this, IIT Patna witnessed the awesome Mime performance, aptly acted by the freshers, depicting the varied mind-sets of a person in his love story, and a short comical play. The excitement augmented to a joyful high



when the fashion show embarked on. Beginning the charismatic show, the fresh batch put up an attractive fashion show in which gorgeous looking girls and smartly dressed boys walked the ramp for the coveted Mr and Miss Freshier's title. The contest, held in a number of rounds, keenly contested and judged the students on different parameters. Ms. Ishita Singh and Mr. Omkar Deshpanday were adjudged as Ms Freshier & Mr Freshier respectively. As the mercury began to rise, the dance floor was left open for some unbridled energy and the night concluded with a DJ-Night.

Independence Day '19

The function started with the flag hoisting ceremony by honourable Director of IIT Patna, Prof. Pushpak Bhattacharyya. Lined up next were the jingoistic events organized by the students of IIT Patna. The intellectual minds presented a mélange of cultural activities which created an atmosphere of national pride on the premises

of the Institute's campus. House of Socio-Cultural Affairs, IIT Patna organized a street play which imparted a very inspiring social message. Other events encompassed the patriotic songs sung by the students. The entire atmosphere was filled with songs full of nationalism highlighting India's flight to progress in spite of its diversity.



Flip-Toe

This year Exosia (The Dance Club IIT Patna) organized its second edition of Intra-College Dance Competition. This time the dance club also released its official logo and name of the club. The participants competed in two major genres that were solo and duet dance. The performances were judged by Mrs. Aparna Bhattacharyya. All the dance boosters from all over the college participated in it and the event concluded successfully.



Janmashtami

The students of the Indian Institute of Technology, Patna celebrated Janmashtami with a great vivaciousness and spiritual fervour. Bhakti Vedanta Club of IIT Patna put up a festive environment by organizing the birthday of Krishna with full vigour. House of Socio-Cultural Affairs, HoSCA, IIT Patna, brought the mass of the institute for many cultural events. The events were filled with fun, excitement, and exhilaration. This time we also organized a stage play that was performed by the freshers.



Aabhar

Like every year this time as well the Cultural Council organized Aabhar, the teachers' day celebration. This time all the cultural activities for the faculty members were organized by the UG students. Many of the professors joined the cultural evening and enjoyed the various informal events organised by the students.



Gandhi Jayanti

On the auspicious occasion of Gandhi Jayanti, a classical evening was organized by the House of Socio-Cultural Affairs. A multitude of melodious performances was the part of the event which made the night a memorable one.



Acoustic Night

Aria (the music club of IIT Patna), organized its first edition of acoustic night this year. The informal musical events succeeded to release all the mid-sem examination stresses. Creating an aura with beautiful lights in front of the new hostel with people enjoying it a lot made this event a successful one.



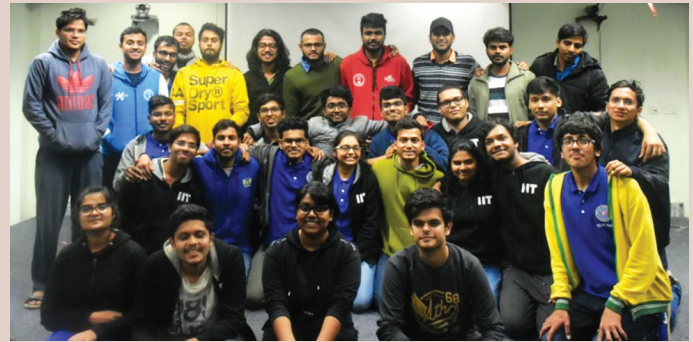
Reverberance

Diwali is one among those festivals which is most awaited at IIT Patna. To mark and celebrate the festive spirit of Diwali, House of Socio-Cultural Affairs presents Reverberance, the Inter-Hall Cultural Tournament every year. This time the college was divided into four major teams and as the days of events were nearby everyone started preparing for their performances. Events were planned out for three days. The evenings started with Spic-Macay on the first day and ended by the college band's performances and DJ-Night.



Inter IIT Cult Meet

In the Inter IIT Cultural meet held at IIT Bombay in December 2019, the cultural contingent of IIT Patna comprised of 70 enthusiastic students. The series of events started with the monoact event which had IIT Patna's participation and the performances were really breath-taking. Street play, mime and solo singing stand-up comedy, group dance, street battle, band competition, art of Photoshop, stage play, Hindi poetry, 51 hour film making and parliamentary debate were some of the events which drew everyone's attention to IIT Patna's great performances. At the end of the day IIT Patna got 4th position in short film making event which was a remarkable achievement that set the spirits high of the whole contingent. With all the hard work and consistent efforts, IIT Patna contingent was successful in bagging 4 prizes, namely



3rd prize in western solo singing, 3rd place in canvas painting, 3rd in Stand-up comedy and also a 3rd position in the art of Photoshop.

Anwasha 2020

With the theme 'Reflection of fond remembrances', Anwasha 2020 was celebrated at IIT Patna from 7th to 9th of February. The opening ceremony of Anwasha'20 was marked by the presence of our Chief Guests Gupteshwar Pandey IPS, DGP, Govt. of Bihar and Guest of Honour Sunil Kumar IPS, AIG (Inspection), Govt. of Bihar, in presence of the Honourable Director of IIT Patna, Prof Pushpak Bhattacharya, Associate Dean, Student Affairs Dr. Manoranjan Kar and Dr. Trishiki Raychoudhary, PIC-Cultural Affairs.

The Pronite of 7th February brought to the audience of Anwasha, a Rajasthani group of hereditary professional musicians known as the Langas and the Manganiars who performed in the SPICMACAY program followed by the act of stand-up comedian Mr. Vipul Goyal and DJ Rhea who spread the beats in the air. On the second day, the Guest for the cultural night was Elite Miss India Asia, Miss Akshata Sonawane. The closing ceremony of Anwasha was just the beginning of the real celebration because it was followed by the most awaited Pronite of Anwasha'20, a concert by the famous Bollywood singer KK. It was for the first time that KK performed live not only in Bihar but also in the North Eastern part of India.



CELESTA'19: A Stellar Trek

Celesta'19, the annual techno-management fest of IIT Patna was conducted on 8th -10th November. Major addition to this year's Celesta was the Robowars. Conducted in an arena made out of heavy metal and 6mm polycarbonate sheets, the event saw participation from all over India as well as the neighbouring countries. Other Robotics Events like Drone Tussle and Roborace received similar response. Our 'Online Treasure Hunt' saw over 5

international participations, one of them even managed to secure a position.

Other big addition to this Year's Celesta was Guest Lecture Series. With dignitaries like Abhi & Niyu (Abhiraj and Niyati, Travel Blogger, #100ReasonsToLoveIndia), Mr. Ajit Balakrishnan (CEO, Rediff.com) and Mr. Sandeep Jain (CEO, Geeks for Geeks) sharing the dais physically, while

Mr. Gabe Gabriel (NASA) and C.N.R. Rao (Bharat Ratna, FRS), shared it virtually. Apart from various technical events and guest lectures, Celesta also witnessed the showcasing of Indra 3.0, the tallest humanoid Robot of India. Workshops were also organised on various topics such as Machine Learning, IOT, Android Development, etc. There were other

robotics events organised for school students as well, promoting techno-culture.

With all the technical events getting wrapped up, the pro nights in Celesta were blessed by renowned stand-up comedians like Kumar Varun and Anubhav Singh Bassi on Day 1, and this was followed by DJ Base Guns on Day 2.



Ted Talk

The theme of our TEDx event this year, "Metamorphosis" was to reflect the process of change. We live in a time where 'change is the only constant'. Changes in transportation, technology, warfare and most importantly in people and society are happening at pace that we can't catch up! So the idea of TEDx IIT Patna was to hear from experts, their experiences and how the industry evolved and how they had to evolve with it.

Our speakers by their life changing experiences inspired the audience to think bigger, brighter and better.

1. **Kaushlendra Kumar:** He shared his journey of life, from being an IIMA topper to working for the farmers in Bihar.
2. **Tanvi Bharadwaj:** She, being a successful female entrepreneur, talked about how she overcame all the hurdles and became the person who she is now.
3. **Sudha Varghese:** Being a Padma Shree herself, her presence made us feel like working for the society and to see it grow. She talked about how she began her journey with a motive to improve the poor girls' condition in the Bihar state.



4. **Shams Alam:** His talk motivated us to improve the technology and deliver better ideas for improving the society in every aspect, his emphasis being on the wheelchair.

Sports Activities

Infinito 2019

Infinito is the annual sports fest of IIT Patna. The third edition of Infinito was successfully conducted from 18th to 20th October 2019. The teams competed fiercely for trophies in athletics, cricket, table tennis, volleyball, basketball and football. It was a proud moment to watch IIT Patna lift the coveted trophy as the overall champion of Infinito 2019. This year's Infinito concluded on a note of commitment to take the fest to greater heights in the



coming years. Pre-Infinito events like PUBG-Mobile were organized which saw participation in a large number. The closing ceremony was held on the third day. The Chief Guest of Infinito Ms. Madhu Priya Jha, the first professional body-building athlete from Bihar and a Swabhiman Khel Ratna award holder, made the event all the more enthralling with her inspirational word.

Prarambh-2019

Prarambh is the annual sports fest of IIT Patna organized by Employee Sports Club. It has proved to be one of the most awaited sports tournaments around. The second edition of Prarambh was successfully conducted from 8th to 10th Nov-2019. The teams competed for trophies in Athletics, Cricket, Table Tennis, Tennis, Volleyball, Badminton (Men & Women) and Football. The closing ceremony was held on the third day. The Chief Guest of Prarambh was Dr. Manoranjan Kar, Associate Dean (Student Affairs).



NSS IIT Patna

Starting in the month of July, with the International Yoga day celebration, with the children of Amhara, the journey of NSS started for this year. On the 73rd Independence Day of India, NSS IIT Patna organized a program for the celebration of 15th August in a different manner by involving children with young innocent minds from Amhara village. The programme included some activities and competitions for them to boost their spirit. Regular cleanliness drives and plantation weeks are included as important events of NSS. Swachhata Pakhwadas are organized on the campus to make the students realize that cleanliness begins at home. A special cleanliness drive was organized at the Bihta railway station this year. One of the achievements of NSS, IIT Patna in the year 2019-20 was the appreciation certificate awarded to the NSS Team for cooperating and helping in spreading awareness about HIV-AIDS and organising voluntary blood donation programmes, by Health Minister of Bihar in an event of "Hum Saathi" mobile app launch which is an informative awareness app for HIV-AIDS transmission prevention and effects.

Like all other National days that are celebrated by NSS with great zeal and enthusiasm, a silent march was organized on the occasion of Gandhi Jayanti by the NSS volunteers. This was to remind the people the teachings of Mahatma Gandhi and to follow the path he walked on. With the collaboration of Celesta, the Annual technical fest of IIT Patna, NSS conducted 'Ashraya', an initiative that set a trend of working for the society by spending time with the poor and the needy. Various events like essay writing competition, teaspoon race, wall painting, muddos, were organized under Ashraya for the children of Amhara. NSS IIT Patna was awarded as the "Best Red Ribbon Club" by the Ministry of Health and Family Welfare on 1st December 2019, on the occasion of World AIDS day at Kedarnath Auditorium, New Delhi, for spreading awareness about AIDS since the last two years.

Students' Corner

1. Back to the Nature



Anupama Singh

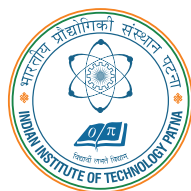
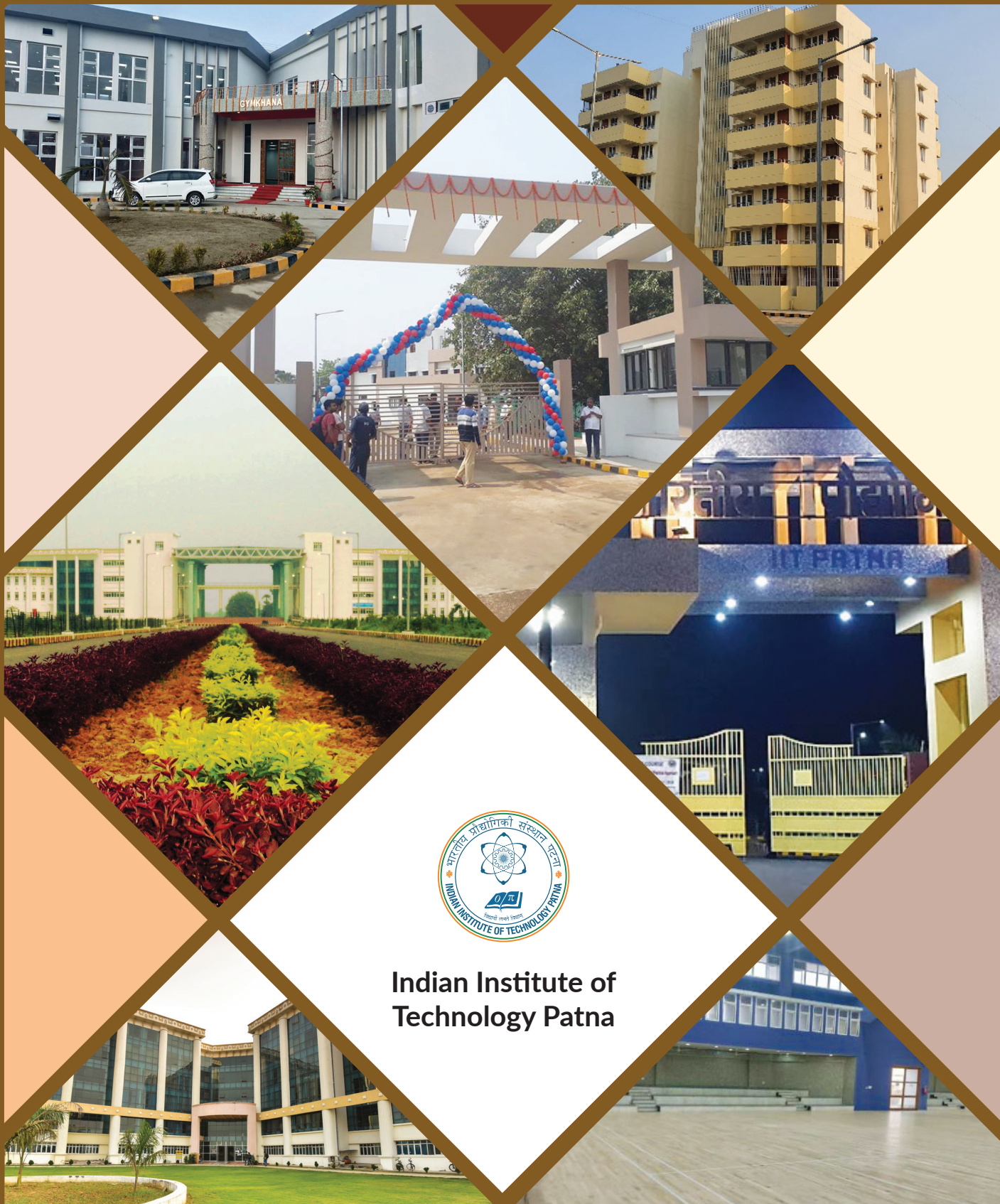
Ph.D. Student, HSS Department

2. The Beauty of my Friend

I saw you in the bus way to College Street
 You take a seat near to driver, I was in the back
 Your silly long hairs flagging to bus window
 You get down at coffee house with a school bag
 Your fire of a cigarette is like lighting a lamp in my heart
 You buy a book of Sri Aurobindo and stair up to house
 I also went up to see you but you faced to wall
 I waited for long hours but you never turned back
 The clouds are roaring and rains are calling me
 I went to home on the hope, I will meet you again
 Next day I saw you at Presidency, painting on a wall
 That remembers me my idea "knowledge should be free"
 The painting contain, Coke exploiting the water-resources
 This is a time I can approach to the beauty of your eyes
 When I appreciate this painting, your question is how?
 The eyes are full of love for the slums of Kolkata
 At this time two eyes reading each other's mind
 The facial beauty is a Red Rose without an ear-ring
 The hand who completed this painting do not have bangles
 This is the love, I saw at the age of twenty-seven
 Now it is time spread this love at the age of seventy-two
 This is the love which I did not born with but,
 You will be my love till the time of my death.

Zeeshan Nezami Ansari

Ph.D. Student, HSS Department



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